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ABSTRACT

The Literacy Learning through Technology project sought to explore how professionals in adult literacy and basic education (ALBE) in Victoria, Australia, developed their expertise with online technology and incorporated it into their programs. Data were gathered from surveys and follow-up interviews with 10 participants and visits to 9 sites that were in various stages of accessing online technology. Results showed that participants became more proficient with online technology if they had free access to the Internet at work and at home, a technical support network, personal motivation, and purpose. Nine of the 10 had incorporated online technology into their teaching. Factors affecting professional development of ALBE professionals included time and commitment they make for their own development and the benefits it brings to their learners. Workshops were useful for those starting to use the Internet, whereas those at higher levels of expertise might benefit from free access at home. Networking should also be promoted. Recommendations were made to increase technical support for teachers and students and to study the impact of online technology on students. (Contains 26 references and 4 appendices: survey form, interview schedule, list of websites, and list of participating sites.) (KC)

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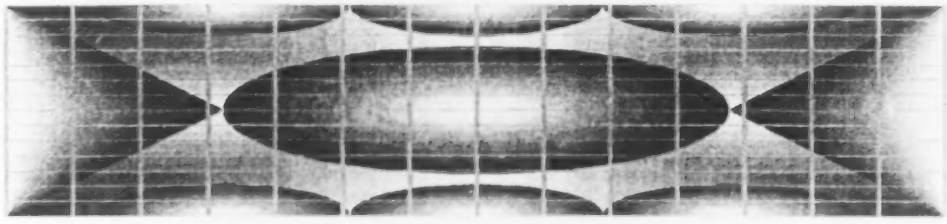
Victoria University of Technology
School of Education

Adult Literacy Research Network Node for Victoria

Going On-line

A Research Report on Use of On-line Technologies by Adult Literacy Teachers and Learners



Literacy Learning Through Technology (LLTT)
An Australian National Training Authority (ANTA) Funded Adult Literacy National Project

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Literacy Learning Through Technology

An ANTA Funded Adult Literacy National Project

Project Manager
Professor John Wilson

Project Coordinator
Syed Javed

Adult Literacy Research Network Node for Victoria

School of Education
Victoria University of Technology

This report could not have been prepared without the cooperation of staff in participating sites. We gratefully acknowledge their constructive contribution to this report.

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Executive Summary

Australian literature on adult literacy from the early 1990s - prior to Internet - found that teachers, students and administrators all believed that significant learning occurred through the effective use of computers. Effectiveness reflected providing appropriate, interesting and easy-to-use programs and matching the learning task to student objectives. Computers were integrated into the classroom programme. More recent literature has addressed such issues as the use of on-line technology by professional educators, the skills that on-line technology may promote in adult learners, and the perceived benefits and drawbacks of on-line technology for adult learning.

The Literacy Learning Through Technology (LLTT) project sought to explore how professionals working in Adult Literacy and Basic Education (ALBE) in Victoria developed their expertise with on-line technology, and incorporated it within their programmes. The project was funded under the Australian National Training Authority (ANTA) Adult Literacy National Project, and administered by the Department of Employment, Education, Training and Youth Affairs (DEETYA).

In June 1997 nine sites were identified. Seven of these, all in the metropolitan area, had participated in previous projects based at the Adult Literacy Research Network Node for Victoria (ALRNNV) while two were new sites in rural areas which had little prior experience of accessing on-line technology. Three of the sites were in Technical and Further Education (TAFE) Institutes while six were within the Adult, Community and Further Education (ACFE) sector. Sites were visited and further technical assistance was facilitated via on-line link-up. A server was setup to support Web development and on-line training.

A survey was administered both in hard copy and in on-line access mode in October 1997, and follow-up interviews were conducted with all participants. Eight of these were face-to-face and tape-recorded, while two were telephone interviews. Information was collected on participants' background in terms of previous acquaintance with computer skills, their access to, and use of, on-line technology in the workplace and at home, their perceptions of the effectiveness of the different forms of professional development which they had experienced, and their use of on-line technology with learners.

As an aid to illuminating factors promoting professional development the project developed a framework whereby professionals at the sites might be categorised as "starters", "users" or "developers" in terms of their expertise with on-line technology.

Of the 10 participants 4 were identified as "developers", the remainder being split between the other two categories.

Factors associated with progression to "developer" level included free access to Internet at work and home, a technical support network and personal motivation and purpose. Some developers also had experience in graphic design. Workshops were viewed as useful for starting off learning about on-line technology, but the most preferred methods were face-to-face support from colleagues and self-directed learning from print and Net resources, and this confirmed findings from other recent studies.

Nine of the 10 participants had incorporated on-line technology into their teaching. Students covered the spectrum of the Certificates of General Education for Adults (CGEA). They accessed the Web, sent and received e-mail messages, and participated in virtual reality activities such as MOO. Some had contributed to Websites; a few had developed their own. Most had greatly increased confidence in using computers. Developers were able to offer students the widest range of learning experiences incorporating on-line technology.

Teachers were unwilling to claim that their students made significant advances in literacy from using on-line technology, but there is evidence of increased output, a greater understanding of what producing written text involves, increased participation by learners and higher levels of enthusiasm and interest, again confirming findings of earlier studies. Further research is required into the literacy skills ALBE students develop through accessing on-line technology.

The study identified some factors affecting professional development of ALBE professionals. It demonstrated the time and commitment they make to their own development, and the benefits that brings to their learners. It is recommended that strategies to promote professional development should reflect the developmental stage of the professional. Workshops, for example, would seem to be most effective if targetted at those just embarking on Internet exploration, while those at other levels might be offered free access from home for a defined period. Networking should be promoted. Further research into the relationship between the skills of "developed" teachers and quality of student learning might be undertaken.

The student experience of on-line technology also requires closer research, particularly into the effects on development of literacy skills, and the social effects such as increased retention within classes, and the extent to which students recruit other students with literacy needs to participate in classrooms which incorporate on-line technology.

Implications from the study lead to recommendations being put forward for three projects:

(a) support to maintain system capability via a central network to accelerate successful uptake of on-line technology by literacy providers, teachers and learners;

(b) targetted professional development to meet the needs of starter, user and developer level literacy professionals;

(c) a detailed study on the impact of on-line technology on student attitudes to learning and literacy achievement.

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Glossary

ACFE	Adult Community and Further Education
ALBE	Adult Literacy and Basic Education
ALRNNV	Adult Literacy Research Network Node for Victoria
ANTA	Australian National Training Authority
Asynchronous	A term used to describe electronic mode of communication where data is exchanged over a network with certain time delay. example - E-mail, News groups, Mailing Lists, Web Forums
BB	Bulletin Board
Browser	A software program used for accessing World Wide Web eg Netscape, Explorer
Chat	A term commonly used to describe Internet based real time communication
DB	Data Base
Down loading	The process of receiving data from a remote server computer to a client's computer
DTP	Desk Top Publishing
EdNA	Education Network Australia
E-mail	Electronic Mail
Firewall	A security program that acts as a gateway between Network s allowing only defined access to Internet facilities
FTP	File Transfer Protocol - a method of transferring data files and software over a network
GD	Graphic Designing
Home Page	A Web document available on a server and acting as an entry point to a collection of related information.

HTML	Hyper Text Markup Language - code language behind Web pages
ISP	Internet Service Provider
LLTT	Literacy Learning Through Technology
MOO	(Multi User Domain) Object Oriented - an application of Internet allowing creation of virtual text based environment for real time communication
NLT	New Learning Technologies
PR	Programming
SS	Spreadsheet
Synchronous	A term used to describe electronic mode of communication where data is exchanged over a network in real time. Example: Internet Relay Chat, MOO, Webchat etc
TAFE	Technical and Further Education
VICNET	Victoria's Community Internet Service Provider
Web	World Wide Web
WP	Word processing

1.0 Background to the Research

In the recent past adult literacy practitioners have begun to explore New Learning Technologies (NLT) with increasing confidence. Since 1994 a number of initiatives within the ALBE sector have seen a growth of print and on-line adult literacy resources. State and National literacy and language related organisations have developed their electronic resource base and have established Websites which provide information and resources.

Realising the significance of new learning technologies for ALBE the Adult Literacy Research Network Node for Victoria (ALRNNV), as part of its networking and research promotion activities in 1994-95, initiated a *Networking through e-mail technology* Project aimed at promoting the use of computer mediated communication amongst adult literacy professionals. The project's main purposes were to establish a mailing list facility for ALBE professionals, and to induct them in the use of Internet and e-mail technology, and to promote discussion and exchange of information.

Funding support from Education Network Australia (EdNA) enabled this professional development work to be expanded in 1995-96 when Internet access was provided to 10 ALBE sites in metropolitan and rural Victoria and a mailing list for adult literacy learners established. .

Individual teachers and learners from these sites are continuing to use NLTs in innovative and interesting ways. Many have established themselves as leading community networking sites. Further initiatives from Adult Community and Further Education (ACFE) and Multimedia Victoria have resulted in more development and growth of technology use in the sector. More teachers are training through the Internet and using it in their training and professional work. ALBE learners are finding new ways to enhance their learning and community participation.

At the same time implementation of NLTs has proved difficult for some ALBE participants indicating a need to identify barriers to participation in technology and formulate successful strategies for further training and professional development. Between August and December 1997 the Australian National Training Authority

(ANTA) funded the *Literacy Learning Through Technology (LLTT) Project* to document current practices of Internet use by Adult Literacy and Basic Education (ALBE) teachers and learners at nine ALBE sites in Victoria. The project identified strategies that enhance uptake of on-line technologies and collected successful examples of on-line use by teachers and learners.

2.0 Literature Review

Anderson, Cheetham, Grice and Marshall (1990) reported on **The Use of Technology in Adult Literacy Programs** in a study conducted under the auspices of the Adult Literacy Action Campaign, as part of the then Federal government's National Policy on Languages. The study developed an evaluation framework which was the basis for considering the potential of a comprehensive range of technologies as provided by ratings on different criteria by managers, teachers and students of adult literacy. It also developed a reference guide for evaluating computer software.

The report includes a case study of computers as tools in adult literacy based on observations and interviews at Giles Plains TAFE, South Australia. Its literature review drew attention to findings from research in the 1980s which had suggested that computer applications were likely to be more effective in teaching lower level word analysis skills and less effective in teaching higher level comprehension skills. Several writers had also drawn attention to the explosion of word processing programs, most of which had not been evaluated. The literature demonstrated that adult literacy students reacted very positively to the use of computers in their literacy courses because it provided privacy, immediate feedback, individualisation (with every student's literacy needs being different), control and flexibility.

The South Australian case study indicated how students were inducted into learning to achieve the goals they wished to achieve and the choice they had as to whether to work with computers or on print based materials. Observation of practice over 10 sessions showed students moving between texts and machines, and it was rare to find a student spending the whole session on the computer. Students rated computers very positively in terms of expectations, needs, feedback, interest level, learning and ease of use. From the point of view of the teacher/manager of the group, computers were perceived to be an effective means of providing appropriate, interesting, easy-to-use programs which allow students to achieve their individual learning objectives. The study also sought an administrator's perspective. The cost of computer-based literacy programs was considered the least favourable aspect. These costs included purchase of hardware, time of staff evaluating software and deciding how they could be incorporated into the teaching program, and the costs of developing computer literacy skills across the entire workforce, especially in a service which relies heavily on a large volunteer input. It was perceived to be important to decide clearly the objective to be realised, and then the hardware/software that could be afforded to do it.

The study concluded that, "students, teacher and administrator, all believe significant learning occurs through the effective use of computers. The key word is ***effective.*** Being effective involves providing appropriate, interesting, easy-to-use programs. Further it involves matching the learning task with student objectives" (p 43).

Javed (1996) reported on development of on-line skills by adult literacy professionals who were provided with material support via modems, Internet connections and technical assistance through workshops, visits and mailing lists. Access to computers and the quality of Internet access played an important role in helping people to learn and make good use of technology. Teachers were able to use the services better from their homes compared to the worksite due to the difficulties in access to computers at suitable times at their worksites. Organisational procedures and policies over hardware and software infrastructure within individual workplaces influenced uptake of on-line technologies significantly. Teachers with more flexible choices over hardware, software and network seemed to be able to demonstrate innovative teaching and learning with on-line technologies.

A number of studies have addressed issues related to on-line technology, access to and use of the Internet by professional educators and learners.

These include:

1. The use of on-line technology by professionals in adult education and their perceptions of its potential.

2. The skills that on-line technology may promote in adult learners.

3. The perceived benefits and drawbacks of on-line technology for adult learning

In the United States, Starr and Milheim (1996) accessed 30 education and training news groups through an Internet search and received 147 replies to the electronic survey they conducted on "educational uses of the Internet". Of the respondents 3 in 4 worked in Colleges or Universities, 37% were in the 40-49 age group and 25% in the 50-59 age group. On average those surveyed made 10.2 accesses of the Internet per week. Just under 3 in 4 had Internet access from work, and 4 in 5 had access from home. When asked about how their Internet skills had been acquired, 9 in 10 said that they had learned from personal experience, while 2 in 3 stated that they had received help from a friend; half had also learned from a journal or book, while fewer than half had attended a class or learned from conference presentations. Furthermore, 9 in 10 used e-mail,

world wide Web and listservs while 3 in 5 used newsgroups. 4 in 5 used Internet for personal research and work, 7 in 10 used it for library access and 2 in 5 used it for accessing class materials and supporting student research. 2 in 3 believed that the impact of on-line technology on education would be very positive, and the great majority of the remainder thought that it would be positive. A study of adult education teachers by Rosen (1996), also in the United States, found that personal time commitment was an important factor in skill mastering.

Benefits of on-line technologies in conversational and didactic writing in both synchronous (MOO) and asynchronous (e-mail) communication by adult literacy and ESL students are widely documented. (Pobega 1997; Butler 1997; Javed 1996; Daly 1996; Davies, L Shield, L & Weininger 1998).

In an exploratory study of On-line and Off-line texts Krause (1995) investigated transference of students' writing skills from on-line interactivity to off-line formal writing. Comparing on-line and off-line texts produced by 20 first year students of a writing class Krause found no significant correlation between on-line interactivity and off-line writing. However, the study showed a strong correlation between number of e-mail posts and level of interactivity suggesting that those who participated most in the community were those who were most active in an on-line environment.

Krause argued that, rather than focusing our attention on how on-line writing will improve students' off line writing, we need to think in terms of benefits of on-line writing environments as these provided his students with a sense of purpose and real audience. Students posting to the listserv knew that others would read their messages because they had read the messages of their colleagues and received answers. Krause noted that, when this writing context shifted to off-line composition for class purposes, students who were more than able to get their points across in the on-line environment wrote stilted and stiff prose in off-line environment.

Anderson et al (1990) suggested that computers could be useful for teaching low level literacy skills. However, Marttunen (1997) has suggested that computers can also teach practical reasoning skills to students in higher education. Marttunen studied the potential of on-line technology for teaching skills of argumentation. His subjects were University students enrolled in a Master of Education course in the Sociology of Education in Finland. The study compared students being taught argumentation by conventional means and on-line over a six week period. In addition the role of the teacher in each situation varied in terms of whether they acted as facilitator or leader. The on-line group being supported by staff in the facilitating role proved most successful. Marttunen argued that on-line technology facilitated development of

argumentation skills by freeing combatants from face-to-face distractions related to age and sex. Shy persons, and those who are slow to formulate arguments, were also seen to be advantaged by the technology. The medium focused attention on the quality of the text and its argument rather than on extraneous factors such as rhetorical tropes or interpersonal pressures. At the same time the pressures inherent in the use of on-line technology in certain situations may mean that fragmentary and ill-considered texts are constructed.

This limited literature review suggests that ALBE students are positive about learning with computers, and that professional development may assist those working in adult literacy to exploit the potential of the new technologies. It appears that professionals who exploit the potential of on-line technology and develop links with on-line learning communities invariably have home access to the Internet. They cover a wide age span and learn the skills mainly on their own or supported by a colleague rather than through a course. On-line technology has also been shown to be a medium through which practical reasoning and argument skills - relevant for CGEA learning outcomes - may be developed. Previous ALRNNV projects (1996-97) have shown that in most ALBE sites there is a willingness to implement NLTs. The report of the Information Technology Project for Adult Literacy (Javed, 1996) pointed to a need for on-going professional development and training for ALBE staff. The report also suggested that research in this area should aim to explore training and professional development needs of ALBE teachers and the use of NLTs in classroom practice. Ways of conceptualising professional development of teachers have been explored recently by Eraut (1994). One of the best known models is by Benner (1984), who conceptualised professional development of nurses as a progression through stages from 'novice' to 'expert'. The boundaries between stages, and the factors which promote development across stages, are, however, matters requiring research.

3.0 Research Questions

As mentioned above LLTT is the latest in a series of projects at ALRNNV on implementation of NLTs in Adult Literacy. The specific questions the project set out to answer were based on those raised in the conclusion of the Information Technology Project (Javed, 1996) and included:

(1) How are NLTs used in ALBE classrooms and what are the implications?

(2) What factors influence professional development of ALBE staff in use of NLTs?

(3) When NLTs are incorporated into the ALBE curriculum what are the effects on learners?

It was believed that the answers to these questions would illuminate a range of policy issues relevant for recognising the quality of what is currently being achieved by practitioners in Victoria, and for promoting the development of ALBE provision and dissemination of the best of current practice.

4.0 Research Sample and Data Collection

The project sought to identify participants for the present project by making telephone and e-mail contact with the sites previously involved with ALRNNV Information Technology Projects between 1994 and 1996. Each site which expressed interest in participating was subsequently visited. These sites were selected because they had functioning hardware and software and were willing to assist the project. The sample nevertheless illustrates the range of contexts in which NLTs are being applied in Victoria. Two additional sites from country Victoria who were new to Internet access, were also added. Data were collected by questionnaires and interviews from 10 ALBE teachers. The sample comprised - two contract and one permanent teaching staff from the TAFE sector; two sessional, two permanent and one contract staff from Metropolitan community sites and two permanent staff from country community sites. There were four males and six females. Five community site participants also had responsibilities as coordinators.

Data were collected between October and December 1997. The questionnaire (Appendix A) was administered in hard copy, but was also accessible on-line. It comprised 42 items divided into four parts:

1. Basic Information
2. Equipment and Access
3. Training and Internet Use
4. Use with Learners

The questionnaire is available on-line at:
http://dingo.vut.edu.au/~alrnnv/lltt/survey/survey_index.html

Personal interviews with participants were held subsequently. The interview schedule was semi-structured and consisted of 20 questions (Appendix B). 8 interviews were conducted face-to-face on-site; 2 were conducted by telephone. Interviewees were encouraged to give personal accounts of their own learning about technology, its role in their professional development and its use with learners.

5.0 Site /Teacher Profile

Ten ALBE teachers participated in the study from nine sites including 3 TAFE Institutes, 4 Metropolitan Community Centres and 2 Rural Community sites.

5.1 TAFE Sites

The three participating TAFE teachers came from Community Access, Language Studies and Adult Basic Education Departments of their respective Institutes. Staff at all three TAFEs had access to Internet, but only 2 had access to Internet equipped laboratories. In all three sites, access to these laboratories was restricted by timetabling arrangements. In one case, the concerned Department had a Macintosh Laboratory and used telephone dial-up connection to access Internet from 3 computers. These Macintosh computers were denied connection to TAFEs Internet Network because the Institute policy did not support Macintosh computers. At another TAFE, access to an Internet Laboratory was available only via another Department's Computer Laboratory. This Laboratory was heavily booked and ALBE learners had limited access.

The exploitation of Internet and its application to classroom learning was limited to one or two staff in these TAFE Departments. Computer Laboratories were mostly used for Software Training. Use of Internet as a communication, learning, researching and publishing medium was only beginning to emerge. None of the TAFE sites had a Departmental Website at the time this study was conducted (August - December 1997). Of the three participants from TAFE, two had contract positions for 6 months or longer and one had a tenured position. All TAFE staff had a teaching load of between 10 to 20 hours per week.

5.2 Metropolitan Community Sites

In four Community Centres access to Internet was via a modem connection using Victoria's Network (VICNET) as an Internet Service Provider (ISP). Two Community Centres had developed computer laboratory facilities within their premises. At one Centre it consisted of an assortment of 8 computers ranging from older model Macs to Pentiums. The other site had a laboratory of fifteen 486 computers. Two other community sites had no computer laboratory facilities but had access to neighbouring library facilities. One Centre also used laptop computers for their computer training classes. Access to Internet was limited to one or two of the available machines.

Staff were enthusiastic about the applicability of Internet for their learners. All had established Websites to promote and publish their activities and work. Use of Internet by learners appeared to be well established with more experienced learners contributing to Web publishing. Of the five participants from Metropolitan community sites, three were coordinators and taught less than 10 hours per week. The remaining two were sessional teachers and had a teaching load of more than 20 hours per week.

5.3 Rural Community Sites

The two country sites were introducing Internet access. One was a large regional provider operating services at five venues for program delivery. Learners had access to computer laboratories for learning computing applications and skills. These laboratories did not have access to Internet. The participant from this site was a permanent staff member who worked as a Language and Literacy Team Leader. The Language and Literacy staff were being inducted into Internet using a recently connected computer. Use with learners had only begun at the time of writing of this report (March 1998).

The second country site was a small Neighbourhood House. The centre had two computers, one recently connected to the Internet. Volunteer staff and learners of the House were just beginning to use Internet facilities at the time of the survey. At both sites Internet access was available through a local service provider and staff participating in the project also had Internet access from their home.

A Model of Professional Development in On-line Technology

Use of Internet based technologies is an innovative and challenging task in ALBE. Internet use is limited to a small number of enterprising teachers. Some have made significant gains in their skills and knowledge of Internet and are exploiting its various resources with a degree of confidence. Others have achieved moderate success with Internet applications for both their personal and class room teaching use. Still others are just beginning to explore the Internet. This study reports the experience of teachers from each category.

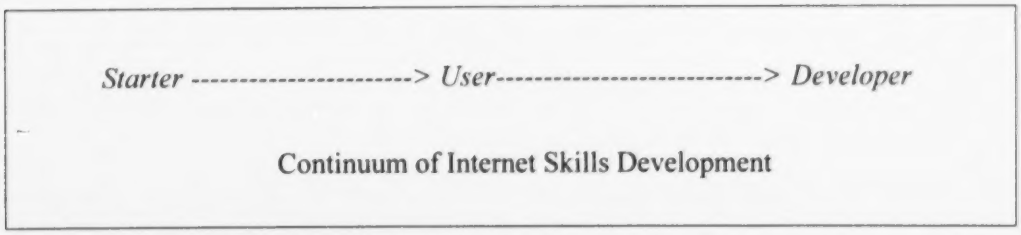

Figure 1: Level of Development in Internet Skills

Drawing on Benner (1984) *Figure 1* expresses these three levels of development as a continuum from *Starter* to *User* to *Developer*. *Starters* are persons who have just begun to explore Internet as a communication and information-seeking tool. *Starters* typically begin their Internet experience with a Web browser and E-mail program. Their main use of Internet involves visiting Websites of interest, e-mailing to friends and colleagues, using Search Engines and bookmarking sites of interest. Most *Starters* experience problems in relation to Internet connectivity, Web addresses and functioning of software programs. Depending on previous experience, access and computer skills some *Starters* will fast track to *Users* level in a matter of days. Others with less confidence and computer skills will stay at the *Starter* level for a longer period. In this study we identified 3 participants as *Starters*.

Users have reasonable confidence in using computer based technologies, Internet applications and asynchronous communication. They can surf the Web to locate sites of relevance. *Users* can use the Internet to join Mailing List discussions and participate in Newsgroup discussions. They use e-mail to a more sophisticated level and can attach documents with e-mail, create and organise *address books*, include *signatures* and *broadcast* a message to several people. *Users* demonstrate a better understanding of the

Web. They can save Web pages for off-line browsing and resolve simple errors in addressing. *Users* show a basic understanding of designing Home Pages and down loading files from Internet but need assistance from experts in resolving HTML and FTP related technical difficulties. In this study we identified 3 participants as *Users*.

Developers have gained necessary expertise in designing and maintaining Web sites and are most likely to have personal and work related Websites developed by them. They have a good command over both synchronous and asynchronous communication tools and use them for their work and professional development. *Developers* show competence in finding, downloading and installing new software from Internet. They also have contacts with a virtual community of literacy and language teachers and use Internet with their learners. In this study we identified 4 participants as *Developers*.

The terms *Starter*, *User* and *Developer*, should, however, be seen as a general guide to the skill level of different participants rather than as indicating that a particular individual satisfied all the criteria for each described above.

A pertinent issue for research not fully addressed in this study is the question of which factors promote professional development along the continuum. As NLTs become more widely available it is crucial that most ALBE staff can exploit the potential of the technology through acquiring the skills of *Users* and, if possible, *Developers* within a short time frame.

7.0 Findings

The findings in this section are generally based on whole group data (N=10) including *Starters*, *Users* and *Developers*. Findings on 'use with learners' is based on data collected from only those 8 sites that were using Internet with their ALBE learners.

7.1 Access to Technology

ALBE staff's access to technology was documented as was how access influenced their level of use and skill development. Access was considered from a personal as well as a hardware perspective. Data were gathered on availability and accessibility of computer at home and work, and the range and condition of these computers. Information was collected on hours logged on to Internet, e-mail messages received per week and whether partners also accessed Internet.

Access to computers is one of the major factors in skill building and using Internet as a teaching resource. Having Internet access from home appeared to be an important factor in learning and mastering Internet skills.

	YES	NO	NOT APPLICABLE
Do you access Internet from home?	8	2	0
Does your spouse also access Internet?	4	3	3

Table 1: Internet Access from Home (N=10)

Table 1 shows that 8/10 respondents had Internet access from home computers. It was claimed that this was an important factor in their ongoing use and skill development.

4/10 respondents stated that their spouses accessed Internet and in 2 cases it was claimed that this assisted their skill development, though exactly how was not made explicit.

What Access to Computers do you have at work?	
Shared computer with other staff	5
Multiple computers	2
Single computer mainly used by you	3

Table 2: Access to Computer at Work (N=10)

Table 2 shows that all participants had access to Internet at work but the extent of access varied in individual cases. 5/10 had shared access where one computer was used by a number of staff. Since this computer was often in use for day-to-day documentation and teaching purposes respondents had little opportunity to use it for accessing Internet. 2/10 had access to Internet from two or more computers at work, mainly due to their responsibility for ensuring Internet connectivity for staff and learner computers. 3/10 had access to Internet from a personal computer at work mainly used by them. This may be due to their role as coordinators.

Item	Level of Internet Use:	
1.	Spend 10 hours or more on the Net every week	5
2.	Receive between 20-100 e-mail messages per week	7
3.	Have more than one e-mail account	8

Table 3: Level of Internet Use (N=10)

Table 3 (line 3) shows that 8/10 participants had more than one e-mail account. Except for the two country participants and one coordinator of a Metropolitan Community Centre, all staff received between 20 to 100 e-mail messages per week. Most subscribed to one or more mailing lists and admitted that sometimes unread mail lay in their mailbox for days. 5/10 spent at least 10 hours or more per week logged on to Internet. Users of synchronous communication who accessed Multi User Domain-Object Oriented (MOO) sites spent considerably more time on-line per day. 2/10 staff were frequent users of MOO.

All sites had a few Apple Macintosh computers - mostly older models (SEs and LCs) - and were working out strategies to acquire new IBM compatible Pentiums.

State Government and ACFE initiatives had provided new opportunities to community centres in upgrading hardware. Three of the five community centres had recently acquired new computers, scanners and digital cameras.

Many sites had their Internet service from a community based company which provided training and support to participating staff. It also provided them access and space on the company Server for Web publishing. Having Internet access from home allowed

participants the choice to download and test new versions of Internet software (downloading at off-peak times at night is more efficient). They were able to locate free and shareware Internet software for communication, graphic designing and Web publishing.

At TAFE sites, Firewall security imposed restrictions on some services such as Telnet. As a result, use of synchronous communication such as MOO and Chat were not available to staff and learners. At two TAFE sites Web server space and access was not available to the participants consequently limiting their ability to publish on the Web.

	Access from Home	Has a Home Page	Uses Internet with learners
Starters (N=3)	2	1	1
Users (N=3)	2	2	2
Developers (N=4)	4	4	4

Table 4: Access to Internet from Home compared with Home Page development and use with learners

When the data on access from home, personal Home Pages, and use of Internet with learners are combined some differences between *Starters*, *Users* and *Developers* emerge as shown in *Table 4*. *Developers* are the only group where each person had all three aspects. The *Starter* and *User* who did not have access from home stayed on these levels even after 2 years of Internet use. It would appear therefore that access from home plays a key role in mastering skills of NLTs. The study did not explore the significance of such factors as personal motivation, ambition, job security, professional commitment etc which may also be relevant for professional development of teachers.

7.2 Training and Internet Use

This section reports evidence on participants' previous experiences in computer use and on how they improved their skills and knowledge of NLT. Participants were asked about the effectiveness of training workshops and what other on-line and print based resources had helped them professionally.

	YES	NO	TOTAL
Did you teach computer classes before accessing Internet?	4	6	10

Table 5: Experience in teaching computer skills before accessing Internet (N=10)

Table 5 shows that 4/10 participants had reasonable experience with computers in that they taught computer classes before accessing Internet. The others had experience in using a range of software applications though many had no formal training in computer applications.

WP	DTP	SS	DB	GD	PR	BB	Fax
10	9	4	5	3	1	1	1

Table 6: Most used computer applications before accessing Internet (N=10)

Table 6 shows participants' use of computer applications prior to accessing Internet. All used computers for Word Processing, 9/10 used Desktop Publishing (DTP), 4/10 used Spreadsheet (SS) and 5/10 used Database (DB) applications. 3/10 participants (all *Developers*) indicated using Graphic Designing (GD) as part of their computer applications. Skills of graphic designing are useful in Web development. Use of computers for Programming (PR), Bulletin Boards (BB), and Fax was reported by only 1/10 participants.

After accessing Internet the level of computer use increased significantly. *Table 7* shows that all participants used e-mail and Web on a regular basis, while 6/10 were using File Transfer Protocol (FTP) and Hyper Text Markup Language (HTML). 5/10 used MOO.

Web	E-mail	FTP	HTML	MOO
10	10	6	6	5

Table 7: Internet applications used by participants (N=10)

Participants provided a range of responses to the question: *what key factors encouraged and motivated you to use Internet* ? Some had a particular fascination with anything new in the field of computing and were instinctively interested in finding out and learning about it; others saw the emergence of Internet as a major educational challenge and wanted to pursue and exploit it to promote personal and professional goals.

One community teacher (*Developer*) said:

The realisation that this medium had great possibilities for my traditional teaching and own professional development.... It is a much valued instrument for personal development and socialising. I see it as an area for ongoing employment in the future.

A TAFE teacher (*Developer*) said:

It is a difficult one to answer. It is like I started and it unravelled and I had to keep going. Sometime I wonder when it will stop.

6/10 participants who accessed Internet from home preferred to do it late at night. Apart from a more reliable Internet connection and faster download time, night hours were also good for real time conversations with peers from European and US time zones. The study found that all *Developers* had free and unlimited access to Internet from home. It can be assumed that this free access to Internet from home has been a critical factor in building *Developer* level skills in these participants.

To elicit perceptions of the most effective training method for developing Internet skills and expertise participants were asked to rate each method of training, listed in *Figure 2*, on a 5 point rating scale with 1 representing lowest and 5 highest effectiveness.
Figure 2 column A shows that 3/10 respondents rated 'Workshops by Experts' at 4-5 on the scale; column B that 8/10 rated 'Face to Face Support from Colleagues' at 4-5; Column C that 2/10 rated learning from 'Colleagues on the Net' at 4-5 and column D that 7/10 rated 'Self-Directed Learning with Print and Net Resources' at 4-5.

Despite apparent lack of enthusiasm for learning from workshops by experts in the above data, in interviews most participants agreed that these workshops helped them to get a start in their learning process.

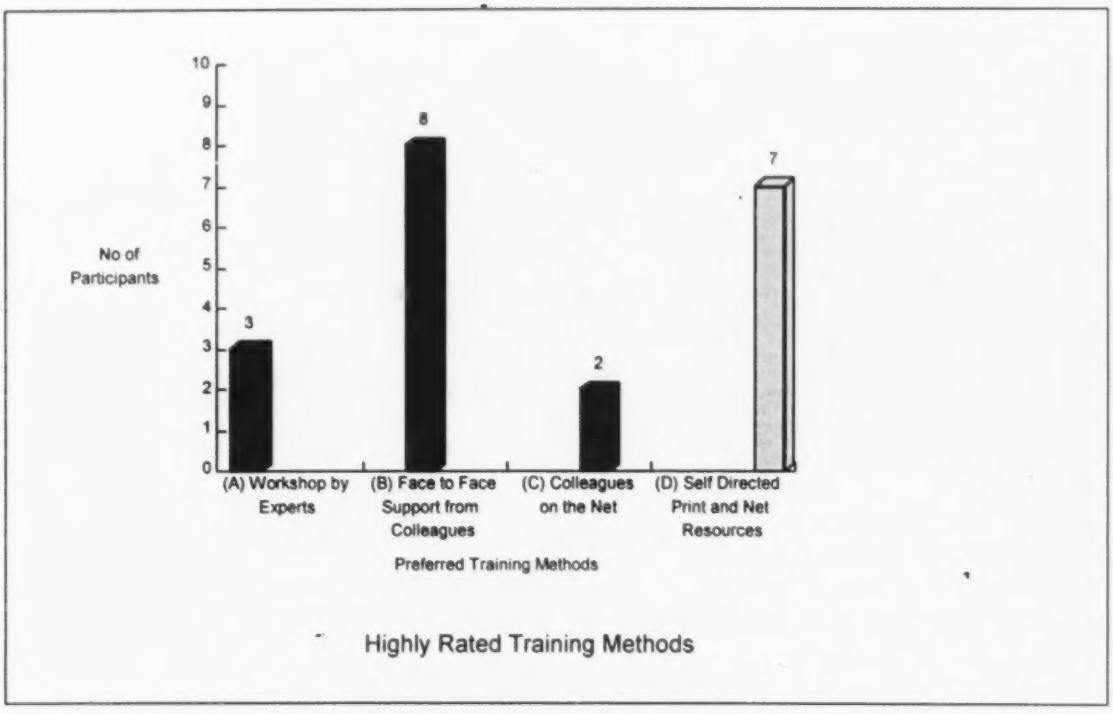

Figure 2: Number of Participants Rating Highly Different Methods of Acquiring Internet Skills and Competence (N=10)

Respondents listed a range of e-mail, Web and MOO Internet resources as useful in their professional development. The most frequently cited resources included the Victorian Community Network (VICNET) Web site, Neteach-L Mailing List and Schmooze University MOO site. Apart from training and access to useful resources on the Net, other factors listed as being helpful in building skills and knowledge of Internet included:

- *communication with other Users;*
- *support of an ISP;*
- *support of partner at home;*
- *having unlimited access time;*
- *support from LLTT project;*
- *"having people around me who I could ask questions of when I needed to";*
- *"having a reason-specific information I was seeking";*
- *perseverance.*

In interview some participants identified lack of access and the additional time required to master Internet skills as significant barriers to their skill development. Participants who had the privilege of free or subsidised access to Internet from work and home appeared to exploit its use more fully and improved their skills. Personal factors such as job insecurity and a desire to seek career enhancement, self-fulfilment by pursuing an

interest, favourable family circumstances - such as living alone and using Internet as a leisure-cum-learning activity, having a spouse who is also interested in Internet, and an encouraging work environment were perceived to have contributed positively towards achieving *Developer* level competence.

Some significant advantages of Internet listed were:

- *speed of access to information;*
- *not having to use space we don't have for storing books and files;*
- *having access to a network of colleagues, friends and resources on the net which is international and not limited by local political and practical constraints;*
- *having a ready and effective medium to publish and experiment without being limited;*
- *feeling a part of a major historical and cultural shift and securing some sort of future in my field;*
- *apparently infinite knowledge base in every field I am interested in;*
- *there are no library fines;*
- *ease of self publishing and self publicising.*

Describing their main difficulties and disadvantages regarding Internet use, some participants acknowledged their inability to devote enough time to learning Internet. They also complained that frustration in searching and accessing has restricted them from becoming more skillful users. Some reported that Internet use was labelled as

'play' at their workplaces. Consequently, they found it difficult to fit it into their routines of work as an additional task. Participants with management responsibilities at their workplaces also found it difficult to devote enough time and priority to Internet skills development.

One participant pointed out that only a handful of teachers and learners were using this technology in the field and this was a disadvantage in terms of not being able to participate in local networking experiences.

Some disadvantages of using Internet were:

- *time involved in learning and using the technology effectively;*
- *searching through junk on the Web;*
- *technical difficulties in connecting and using various programs;*
- *cost of connectivity;*
- *potential source of virus;*
- *lack of privacy, confidentiality, risks etc.*

Typical remarks by *Users* and *Developers* showed their concerns regarding NLTs:

> ***One always seems to require more learning. One is never competent in this domain. —Developer***

> ***Time. It has wasted too much of my time. I should probably be spending less time on the net and more time pursuing other interests that in the long term will be of greater personal benefit to me. —Developer.***

> *Hard to locate specific information - so many choices. —User*

> *Computer systems still unstable-crashes can lose months of research, links, bookmarks etc. —User*

This section has shown that participants had to invest a considerable amount of personal time initially to master this new technology. *Developers* saw Internet access from home as essential for their skill building, allowing them to explore Internet resources, try different software programs, problem-solve technical elements and communicate with peers. They used Internet based communication via e-mail, mailing lists and MOO to get in touch with other teachers.

Most preferred to gain Internet skills via face to face peer support and using Internet resources. Training workshops proved helpful in initiating interest and providing a kick-start for a self-directed learning process. However, in general, they preferred to enhance skills through self-directed learning using print and Net resources combined with face to face support from mentoring colleagues and experts.

7.3 Use With Learners

Although the study did not attempt to collect data on total numbers of learners participating at the 9 sites, each site had a range of programs for learners and at several sites these programs covered a wide range of needs. The focus of the study was on obtaining information from participants on the ways they incorporated NLTs into their programs. Data were gathered on the ways in which learners were able to access Internet resources and use it in learning activities. *Table 8* shows that 9/10 teachers provided Internet access for learners and these included persons studying at Levels 1 & 2 of the CGEA and adult learners preparing for further studies in TAFE Institutes. It also shows that in 7 of these settings teachers claimed that learners had published work on the Web.

	YES	NO	TOTAL
Do learners have access to Internet facilities in a class or laboratory?	9	1	10
Have learners published work on the Web?	7	3	10

Table 8: Learners' access to Internet facilities and use in publishing on the Web (N=10)

In a typical Community setting, teachers who wish to use Internet with learners will usually discuss access and the content for the session before introducing the computer facility. The session could be part of an ongoing project or topic that learners are researching or studying. To access Internet, learners will usually work in small groups under the teacher's guidance and supervision. In reading and writing classes, learners may have already been shown an e-mail message or a piece of information from the Web before drafting their own work for posting on the Internet. Working in small groups, learners are able to help each other learn new computer skills. After the session, one or two more keen learners will usually stay back and continue to use the facilities (if they are free). These learners pick up finer skills and later may assist the whole class in publishing their work on the Web.

At one TAFE site several stand alone computers were configured with a Web browser and an HTML editor. Even though not connected to Internet, designing of Web pages was possible and teachers and learners thus engaged found this facility convenient for working off-line and preparing work for publishing.

Web	E-mail	MOO	HTML
8	6	4	4

Table 9: Most used Internet Applications by learners (N=10)

Table 9 shows that the Web and E-mail were the most used facilities. On some sites *Developers* introduced MOO and HTML facilities. However, learners' participation in these activities required continuous teacher assistance and support. One *Developer* reported that some learners were able to acquire complex computer routines despite their limited literacy skills.

7.3.1 Use of Web by Learners

In most cases ALBE learners' use of the Web exceeded any other use of Internet. For most, the Web was their first experience with Internet. This introduced them to skills for using browser applications and navigating using hypertext links. Once learners became familiar with the graphical interface of a browser, their motivation increased leading them to visit new sites and search for relevant information.

All teachers using Internet with their learners reported teaching skills of using and searching the Web. Finding useful information quickly was considered an important skill. Searching, collecting and saving good graphics for class projects was also taught by some teachers. Some *Developers* involved their learners in collaborative publishing projects where learners were also taught skills of designing Web pages using HTML editors. These teachers helped their learners design and publish their personal Home Pages as part of class activity involving HTML editing. It was stated that some learners demonstrated increased motivation to learn due to their involvement with Internet and Web publishing.

7.3.2 Use of E-mail by Learners

Teachers stated that ALBE learners used e-mail frequently. Although some teachers expressed their frustration in getting learners motivated to compose e-mail messages, others pointed to successful projects involving e-mail exchanges between learners. One often cited problem with e-mail projects involving communication with overseas classes was the delay in receiving responses due to timing of classes and different starting and finishing dates. Some teachers reported successful use of e-mail in generating discussion between local literacy classes and replying to e-mail messages posted on Australian and international mailing lists. Free e-mail services such as Hotmail were also used by learners who then used these e-mail accounts to contact their family and friends and subscribed to mailing lists of their interest and choice.

Some teachers reported using e-mail with classes at CGEA Levels 1 and 2 by first drafting and revising letters in class and then keying them in. Teachers then sent these messages and printed out replies for reading aloud in class.

7.3.3 Use of MOO by Learners

4/10 teachers including 3 *Developers*, reported using MOO communication with their classes. In this synchronous mode of written communication teachers used speed writing, talking, studying logs, taking guided tours and being guides, building arguments and socialising as some examples of students' engagement with MOO. One teacher commented:

> *Lower level learners make huge changes in output when they MOO. This is stunning - like 500% increase in volume/time.*

Teachers assisted learners to acquire confident use of the technology and then gradually withdrew help, letting them solve problems by peer consultation and trial and error. The work of learners was also published on the Web. Some teachers at CGEA Levels 1 & 2 wrote down what learners wanted to say and then published that on the Web. With learners at CGEA Levels 3 & 4 teachers modelled writing and design techniques and allowed learners to write and design themselves. As a follow up, teachers took the responsibility of correcting HTML tags and doing all file transfers to the server. Examples of Web publishing from six participating sites can be seen from Websites listed in Appendix C. In this report examples of Web publishing are not provided due to intellectual property and copyright consideration.

7.4 Effects of Internet Use on Literacy Learners

Participants were asked to indicate how Internet access and use had impacted on ALBE learners' proficiency in reading and writing. Replies indicated a reluctance to identify such effects. One respondent wrote:

> ***I am reluctant to answer this question as it requires proper research and I don't want some flippant claims to enhanced literacy skills from Internet use used in a report.***

However, another suggested that publishing learners' work on the Web promotes engagement with the purposes of writing.

> *Understanding and seeing the total process of writing from drafting to writing to publishing and distributing. It gives them a better sense of public audience (WWW) and personal audience and etiquette (MOO & E-mail)*

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Most teachers reported that their learners displayed increased motivation, more self-directed learning, and an increased confidence in using technology and computers generally. This may be due to their increased participation in seeking, searching and communicating experiences on the Internet. The Web seems to provide a real sense of motivation and an authentic real world environment for reading and writing skills. One teacher pointed out that:

> *It (Internet) is an excellent means for their learning to work collaboratively and an excellent means for establishing friendships and relationships with others locally and abroad. It helps in their ability to work with abstract concepts eg code.*

One teacher specially commented on the increased confidence level of female learners with the use of Internet, and several reported the increased participation in computer based activities by female learners. One teacher commented:

> *Women learners sometimes demonstrate or verbalise great increases in self-confidence as a result of being able to show/tell their male family members about having e-mail and Web pages.*

This section has shown that ALBE learners were using Internet facilities in a range of learning situations which included application of E-mail, Web, MOO and HTML editing. E-mail and Web were the most popular Internet applications with learners. *Developers* were successfully using MOO and Web publishing with their learners. Use of these technologies seems to have impacted positively on clients' participation in classes. Female adult literacy learners also appeared to show a considerable increase in confidence with computers.

Teachers were reluctant to make a direct connection between students' participation in Internet activities and development of reading and writing abilities. However, there is evidence of extensive written output by some students and a greater understanding of what producing written texts for specific purposes entails. In addition, Internet based activities appear to increase learner participation and generate higher levels of enthusiasm and interest.

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8.0 Conclusion and Implications

This study has reported how 10 ALBE practitioners in 9 sites in TAFE and Community Education extended their on-line technology skills and used them with learners. Data were collected during October-December 1997 from teachers whose on-line skills ranged along a continuum from *Starters* to *Developers*. Findings suggest that access, support networks and a sense of purpose for the use of NLTs are key factors facilitating transition from *Starter* to *Developer* and effective use of on-line technology with learners in ALBE classes.

Access is central to acquisition and use of on-line skills which lead to *Developer* level competence. Access involves both availability of infrastructure, hardware and software, and flexibility and choice in using it.

All participants had access to Internet from work, but *Developers* also had home access. They could, consequently, explore Internet more fully and develop their confidence and skill. Many sites had Internet service from community-based Internet companies which provided training and support to participating staff, as well as access and space on a company Server for Web publishing. Unrestricted access to Internet from home allowed participants the choice to download and test new versions of Internet software. They were able to find free and shareware Internet applications for communication, graphic designing and Web publishing.

A majority of participants in this study, as in Rosen (1996), indicated that time involved in learning to use and apply NLTs played a key role in mastering skills. Those with access from home were able to devote more time to building their Internet skills whereas those accessing from work only could not learn these skills due to other work pressures.

Development of Internet skills and expertise was accelerated when participants had an explicit goal in using the Internet. Websites, for example, promoted their activities and work through it. On-line publishing also provided opportunities for sites to publicise their efforts with NLTs. Participants explored the use of Internet with ALBE learners and generated Internet-based learning activities using e-mail, MOO and Web designing. Participants who were able to articulate clear personal and professional purposes for accessing Internet were able to progress to *Developer* level competence.

The findings confirm Starr and Milheim (1996) in showing that professionals prefer self-directed learning using print and Net resources to learn skills of Internet, though peer support and mentoring are also important. Initially, all participants attended workshops and relied on peer and face-to-face support. Later, they became more self-directed learners relying on Internet based resources and on-line network. Most *Developers* relied predominantly on Internet based resources. *Starters* and *Users* relied more on face-to-face support from mentors and experts.

Developers were able to offer learners more opportunity to exploit the potential of the technology. This argues for further professional development opportunities of a type appropriate to level of development to speed the process of transition along the continuum.

Learners' engagement with computers resulted in increased computer confidence. They spent more time on computers and increased their skills in keyboarding, using a mouse, navigating, saving and printing.

In addition, learners also engaged with the process of communicating, socialising, researching and publishing. The evidence confirms findings from recent work by Davies, Shield and Weininger (1998), Pobega (1997) and Butler (1997), that Internet provides an ideal base for collaborative work and peer learning. Teachers also reported a general increase in the volume of reading and writing undertaken by learners. However, there is little hard evidence or agreement on whether these increases in reading and writing activities are translated into reading and writing proficiency off-line. Teachers claim that the important gains are affective and participatory. Learners feel part of a new learning and communication medium and begin to use technology more confidently.

The study also confirms Anderson et.al's (1990) findings that ALBE learners at all levels of CGEA are able to benefit from accessing the technology. The nature of that benefit reflects the professional level of the teacher and the resources available. Participants were able to point to the repertoire of technology that learners could exploit and, although they were unwilling to make a direct connection between levels of use of technology and gains in reading and writing skills, there is evidence of increase

confidence and higher and more varied literacy outputs. Some learners also assume roles of teachers of peers and become leaders — "*developers*" — in the application of technology, suggesting parallel development paths of teachers and students.

In relation to the research questions posed in Section 3, the findings from this small-scale study are illuminative rather than conclusive. They do, however, have potentially important implications:

1. On-line technology is as significant for the modern world as Caxton's printing press for the 15th Century. Adult literacy provision in Australia is increasingly going on-line, with consequent expectation from the field that the system's on-line capability will be developed to promote networking, access to, and provision of resources, and research and professional growth opportunities at both national and international levels.

   Language Australia's Adult Literacy Research Network Nodes have provided an important professional focus over the past few years, but urgently need to develop their on-line capability if they are to stay abreast of, let alone lead, developments in the field. The Network - assuming it survives - needs to be electronically linked and professionally supported from a Node or Nodes which can provide a focal point for exploiting the potential of the new resources.

2. Professionals "developed" in skills of on-line technology have the potential to provide their learners with qualitatively superior learning experiences than professionals at earlier levels of development. For the potential of on-line technology to be exploited for the benefit of the substantial numbers of adults in Australia with limited literacy skills, it is desirable to find cost-effective ways of assisting ALBE professionals to progress through the stages identified in this report. If the findings of the study are acted on, a targetted professional development strategy is required which provides an appropriate mix of professional experiences, workshops for those new to on-line technology leading to the fostering of networks, support for home purchase of computers and free Internet access for a limited period, in recognition of the personal time costs incurred by professionals who seek to master the skills, and provision of centralised on-line support - from "developed" Nodes, or a national Centre - to which professionals who are "Developers" could contribute to and benefit from.

3. The impressionistic evidence that on-line technology both motivates many learners and results in extended engagement in literacy text production requires more focussed research into such issues as: the content that motivates, the quality of texts being produced, the literacy skills being acquired, the developmental paths of individual learners, and the effects of access on retention of current learners and the recruitment of new ones.

Proposals for projects to promote these objectives might be invited.

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Appendix A. Questionnaire

Literacy Learning Through Technology(LLTT)

Internet Use Survey

Go to Part A Go to Part C

Go to Part B Go to Part D

Overview

The purpose of this survey is to document and analyze the use of Internet based resources by people who are trying to apply these technologies within their personal and work contexts.

We are assuming that as a teacher interested in exploring the use of Internet you are going through a steep learning curve and your past and present experiences are likely to provide us with valuable insight into successful practices and processes.

This survey is divided into four Sections:

Part A. Basic Information

Part B. Equipment and Access

Part C. Training and Internet Use

Part D. Use with Learners

Completing this Survey

OPTION 1

Complete this survey online. Go to each section of the survey by clicking on the "Go to Part..." link above and after completing the survey click on the submit button. Your computer may take a few moments to send the completed form electronically. Complete other parts of the survey in the same way. In the survey response boxes you may type in as much information as you like. Please complete all sections.

OPTION 2

Complete this survey off-line. If you wish to complete this survey off-line print Parts A to D on your printer. Complete the form using a pen and send completed forms to me via snail mail (Australia Post) at:

Syed Javed
Coordinator LLTT Project
Department of Education
Victoria University of Technology
Footscray Campus
P.O. Box 14428 MCMC
Melbourne 8001

The information obtained through this survey will be used to draw generalized statements only. All information provided will be treated as confidential. If you have any concerns completing this survey please do not hesitate to contact Syed Javed at 03-92847010 or email syed@dingo.vut.edu.au

LLTT Internet Use Survey

PART A - Basic Information

1. Your Name
2. Position
3. Phone
4. Fax
5. E-mail Address

6. Postal Address

7. Home Page http://

8. Employment Status

- ☐ Permanent
- ☐ Contract Full Time
- ☐ Contract Part Time
- ☐ Sessional
- ☐ Voluntary

9. Number of hours per week engaged in face to face teaching

- ☐ Less than 10 hours
- ☐ More than 10 but less than 20 hours
- ☐ More than 20 hours

10. Do you work for more than one employer

☐ Yes ☐ No

Submit Reset

Go to PART B of this Survey

LLTT Internet Use Survey

PART B - Equipment and Access

11. What access to computer do you have at work (other than computer lab access)

- ☐ A computer shared with other staff
- ☐ A computer shared with students
- ☐ A computer mainly used by you
- ☐ Other _____

12. How would you describe the make and model of your work computer.

For example: is it a Mac or PC? what model? RAM?

13. Is your work computer connected to the Internet?

☐ Yes ☐ No - Go to question 15

14. How does your work computer connect to Internet?

- ☐ Using a Modem
- ☐ Using Direct Network Connection
- ☐ Other (Specify) _____

15. Is your home computer connected to Internet?

☐ Yes ☐ No

16. When did you first connect to Internet from your work or home computer?

☐ More than 2 years ago

☐ More than 1 year ago

☐ In the last 12 months

17. How would you describe your e-mail address

☐ One e-mail address used only by you

☐ One e-mail address shared with others

☐ More than one e-mail addresses used by you

18. Does your spouse/partner also access Internet?

☐ Yes ☐ No ☐ Not Applicable

19. How many of your work colleagues access Internet on a regular basis?

☐ None

☐ Upto 3

☐ More than 3

20. How many hours per week would you be logged on to the Internet?

☐ Less than 2 hours

☐ 2 or more but less than 10 hours

☐ More than 10 hours

21. How often do you check your e-mail?

☐ Every day

☐ Once every week

☐ More than once every week but not everyday

☐ Only occasionally

22. How many e-mail messages do you receive every week?

☐ Less than 5

☐ 5 or more but less than 20

☐ Between 20 and 100

LLTT Internet Use Survey

PART C - Training and Internet Use

23. What was your level of computer usage before accessing Internet? (Select as many options as relevant)

- ☐ Word-processing
- ☐ Desktop Publishing
- ☐ Spreadsheet Applications
- ☐ Database Applications
- ☐ Graphic Designing
- ☐ Programming
- ☐ Fax Transmission
- ☐ Bulletin Boards
- ☐ Games

24. Did you teach computer classes before learning to use Internet?

☐ Yes ☐ No

25. How would you rate the effectiveness of following training methods in developing your Internet skills and expertise.

(Number 1 represents lowest and 5 represents highest effectiveness)

A. Training Workshops by experts:

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

B. Informal face to face training and support from colleagues:

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

C. Informal learning from the colleagues on the Internet:

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

D. Self-directed learning using Print and Internet resources:

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

26. What is your preferred time for accessing Internet?

(For example: early morning from 5.00 to 7.00 am)

27. Which Internet based resources have proved to be most useful for your professional development. (if possible, give names of mailing lists, news groups, web sites)

28. What key factors encouraged and motivated you to train yourself for using Internet?

29. What key factors you identify as having been most helpful in building your skills and knowledge of Internet?

30. What are the main advantages of Internet use to you?

31. What are the main disadvantages of Internet use to you?

32. What are your most urgent professional development and training priorities in relation to online technologies?

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LLTT Internet Use Survey

PART D - Use with Learners

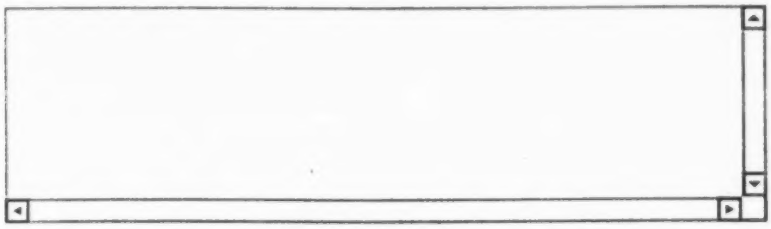
33. Do your students have access to Internet in their classroom or computer lab?

☐ Yes ☐ No

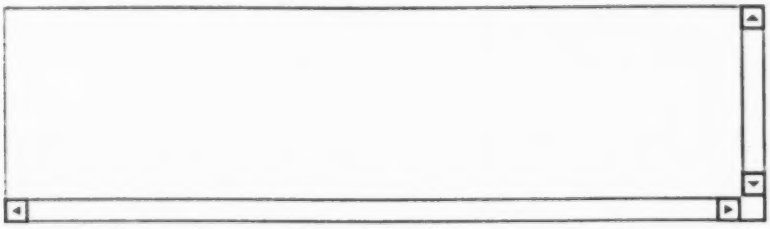
34. Have your students published work on the World Wide Web?

☐ Yes ☐ No

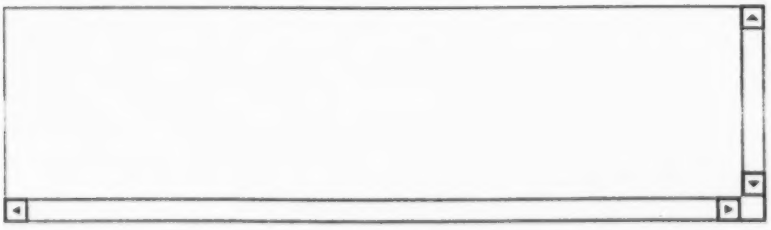
35. What are the most used Internet applications (e-mail, Web etc) by your students?



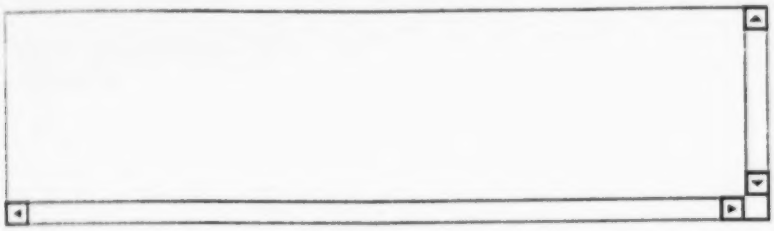
36. How do you use e-mail with your students?



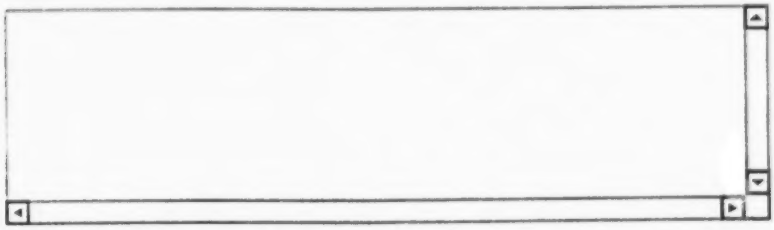
37. How do you use the Web with your students?



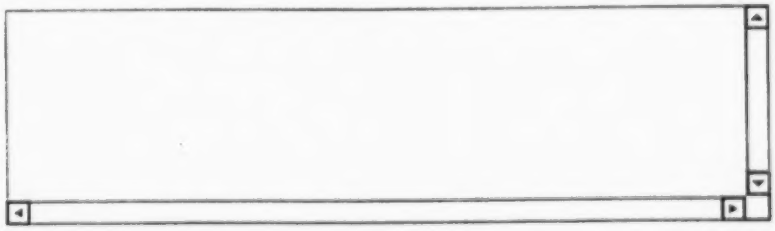
38. What other Internet applications do you use with your students? How do you use it?



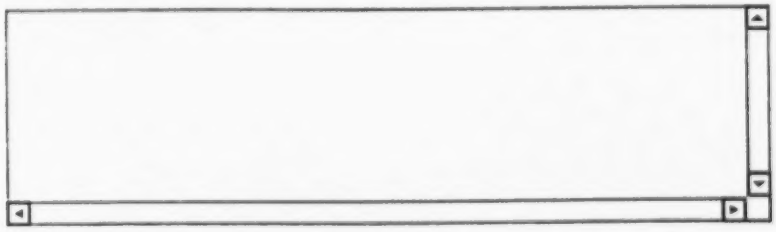
39. What changes in the student's literacy skills have you noticed as a result of using Internet based applications with them?



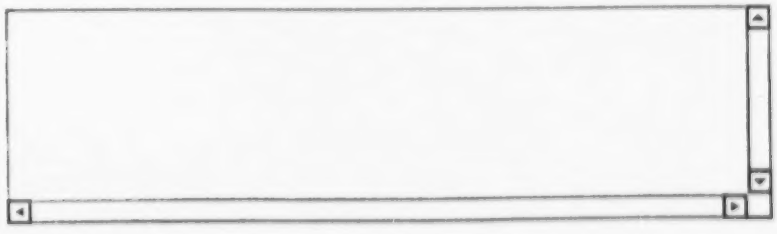
40. What changes in the student's attitude towards learning have you noticed as a result of using Internet based applications with them?



41. What level of assistance do you provide to your students in publishing their work on the Web?



42. What unexpected outcomes have you noticed as a result of use of Internet with your classes?



APPENDIX B. INTERVIEW SCHEDULE

INTERVIEW QUESTIONS

1. When did you first connect to Internet?

- How long ago?
- From home or work?
- Supported by a project or initiative?
- Did you have a mentor or personal contact with techie?

2. How would you describe your work responsibilities?

- Do you have a major role in coordinating programs at your place?
- Is your role mainly as a teacher?
- Do you teach reading and writing classes?
- Have you been involved in publishing students work (as books, Newsletters etc)?

3. What was the most difficult part for you in beginning to use the Internet?

- Did your modem connection work at first attempt?
- How many hours/days did it take to get the system going?
- Did you know how to solve the problem?
- Did you read manuals and tried trial and error?

4. What organisational and infrastructure barriers did you face in use of Internet?

- Did you have a spare telephone line at work?
- Did your boss and colleagues support you in your work?
- Did your IT support prove useful?
- Does your institute IT policy support uncontrolled access to Internet?
- Do you have a firewall problem?
- Are you allowed to choose software?

5. How did you overcome these problems?

- Did you forge closer links with IT people to solve your problems?
- Did you give up chasing IT support?
- Did you get time allowance for implementing Internet within your workplace?

6. What were the first programs you used on Internet?

- Did you learn Unix based commands?
- What were the first Web browser and e-mail clients that you used?
- How did you upgrade to newer versions?

7. How did you improve your skills in using the Internet?

- Did you read manuals?
- Which ones did you find helpful?

· How did collegial support work?
· How many one day workshops did you attend and did they prove worthy?
· How did you use Internet for self-training?

8. What support you got from your superiors [employers/managers] in building your Internet skills?

· Did your manager/HOD support your Internet interest?
· Did s/he buy modem-Internet access for you?
· Did you receive time allowance/ promotion/ job security as a result of your Internet activity?

9. What was your main motivation in mastering Internet skills?

· Do you have a long time interest in computers?
· Did you see computer technology as a powerful medium of expression
· Did your employment opportunities improved as a result of your learning Internet?

10. Have your teaching methods and strategies changed as a result of on-line access?

· Are you teaching computer skills?
· Are you teaching literacy/numeracy or ESL?
· Are you teaching both computer skills and literacy at the same time?
· How do you use Internet within classes?

11. What is the most essential part of Internet for your use and what are the next two in importance?

· on a personal level
· for your work

12. Do you have contacts with on-line peers from overseas? How often do you communicate with them?

· Are you familiar with names like: Greg Younger, Ruth Vilmi, Dave Sperling, Anthea Tillayer, Roy Bowers, Julie Farsetti, Mark Warschauer, Kristina Pfaff-Harris, Karla Frizler
· Have you been in contact with them?
. Have you been in contact with any of them?

13. How do you resolve technical problems with your computer system?

· Do yourself by trial and error?
· Have a reliable IT support?
· Have a network of friends to rely on?
· Have someone in your family who looks after technical side?

14. What barriers can you identify that inhibit your use of Internet?

· Lack of time?

- Lack of connectivity?
- Family pressures?

15. How long did it take you to become a skilful user of Internet?

- Include all the time that went into those frustrating nights...

16. Did you have any family support/barrier in learning Internet?

- Do you have young children in your family?

17. How do you use Internet with your classes?

- Key-pals communication, MOOing, Web publishing, Searching, Graphics.

18. Do you notice any difference in ESB and NESB students' approach to Internet?

- What features of Internet appeal to these groups particularly?
- Are there any marked differences?

19. What features of Internet you think are most useful for your classes?

20. What are your plans for using On-line technology in the coming months?

APPENDIX C. LIST OF WEBSITES

Adult Basic Education,WMITAFE
http://www.vicnet.net.au/~wmit/students/

Carlton Reading and Writing
http://www.vicnet.net.au/~carlrw/CARWP_SITE/STUDENT_WORK.HTM

Community Education, VUT -TAFE
http://cougar.vut.edu.au/~dalbj/engcomp97/home.htm

Duke Street Community Centre
http://www.vicnet.net.au/~twt/frontpage.html

Flemington
http://www.vicnet.net.au/~flemrw/students.htm

Yarrawonga
http://www.cnl.com.au/users/yarranh/

Yarraville
http://www.vicnet.net.au/~yarracc/student1.htm

APPENDIX D. LIST OF PARTICIPATING SITES

Adult Basic Education
Western Melbourne Institute of TAFE
Community Education
Victoria University of Technology TAFE Section
Language Studies Department
Eastern Institute of TAFE
Carlton Reading and Writing, Carlton
Duke Street Community Centre, Sunshine
Flemington Reading and Writing, Flemington
Yarraville Community Centre, Yarraville
Community Education Centre, Wodonga
Yarrawonga Neighbourhood House, Yarrawonga